

Claims

- [c1] 1.A method for losslessly transmitting data, the method comprising:
separating the data into at least a first portion and a second portion;
subtracting the second portion from the first portion to calculate a difference
between the first and second portions;
transmitting the first portion and the difference; and
adding the first portion and the difference to reconstruct the second portion.
- [c2] 2.The method of claim 1 further including:
storing the first portion in its entirety; and
storing the difference.
- [c3] 3.The method of claim 1 further including projecting the first portion and the
reconstructed second portion.
- [c4] 4.The method of claim 1 wherein the data comprises at least a first image and a
second image, the second image being a temporally displaced version of the
first image.
- [c5] 5.The method of claim 4 wherein the first image corresponds to the first portion
of the data and the second image corresponds to the second portion of the
data.
- [c6] 6.The method of claim 4 further including dividing each of the first and second
images into a first area and a second area, wherein the first and second areas of
the first image correspond to the first and second areas of the second image.
- [c7] 7.The method of claim 6 wherein the first portion of the data corresponds to
the first area of the first image, the second portion of the data corresponds to
the first portion of the second image, a third portion of the data corresponds to
the second area of the first image, and a fourth portion of the data corresponds
to the second portion of the second image.
- [c8] 8.The method of claim 7 further including:
creating a list, the list including the first portion of the data, the difference
between the first and second portions of the data, the third portion of the data,

and a difference between the third and fourth portions of the data; and transmitting the list.

- [c9] 9.The method of claim 8 further including:
identifying a maximum number of images; and
placing the maximum number on the list, so that the number of images included on the list can be controlled.
- [c10] 10.The method of claim 9 further including:
identifying a maximum size of the first, second, third, and fourth portions; and
optimizing a transmission by varying the maximum number of images and the maximum size of the first, second, third, and fourth portions.
- [c11] 11. A method for transferring a design for projection in an imaging system, the method comprising:
identifying a plurality of fundamental shapes occurring in the design by
comparing discrete portions of the design to a library containing the fundamental shapes;
extracting the fundamental shapes from the design; and
transferring the extracted fundamental shapes for projection in the imaging system.
- [c12] 12.The method of claim 11 further including reconstructing the design from the transferred fundamental shapes.
- [c13] 13.The method of claim 12 further including:
adding the extracted fundamental shapes to a list; and
transferring the list.
- [c14] 14.The method of claim 13 further including generating a plurality of ordered frames from the list and the fundamental shapes, wherein each frame is temporally shifted from a preceding frame and a following frame.
- [c15] 15.The method of claim 13 further including:
dividing the fundamental shapes and list into a plurality of portions; and
transferring the plurality of portions to a plurality of drivers for projection.

- [c16] 16.A method for losslessly transferring data in an imaging system, the method comprising:
providing a pattern alphabet, the pattern alphabet comprising a plurality of patterns;
comparing portions of the data to be transferred to the plurality of patterns;
identifying the portions of the data that match individual patterns from the plurality of patterns; and
transferring the individual patterns.
- [c17] 17.The method of claim 16 wherein the data to be transferred is an image.
- [c18] 18.The method of claim 17 further including:
identifying a unique portion of the design for which a pattern cannot be identified; and
creating a special pattern for the unique portion.
- [c19] 19.The method of claim 16 further including reconstructing the data by combining the individual patterns.
- [c20] 20.The method of claim 16 wherein an individual pattern is only transferred once.
- [c21] 21.A method for transferring at least a first frame and a second frame in a photolithography system, wherein the second frame is a temporally shifted version of the first frame, the method comprising:
setting a maximum size of at least a first area and a second area;
dividing each of the first and second frames into at least a first area and a second area, wherein the first and second areas of the first frame correspond to the first and second areas of the second frame, respectively;
subtracting the first and second areas of the second frame from the corresponding first and second areas of the first frame to obtain a difference for each of the first and second areas; and
transferring the first frame and the differences of the first and second areas.
- [c22] 22.The method of claim 21 further including reconstructing the second frame by adding the differences of the first and second areas to the corresponding

first and second areas of the first frame.

- [c23] 23.The method of claim 21 further including:
creating a list;
defining a maximum number of frames for each list;
adding the first frame to the list;
adding the differences of the first and second areas to the list; and
transferring the list.
- [c24] 24.A method for transferring an image in a photolithography system, the image comprising a plurality of points, the method comprising:
defining a sampling criterion for the image;
identifying individual points from the plurality of points using the sampling criterion; and
transferring the identified individual points.
- [c25] 25.The method of claim 24 further including reconstructing at least a portion of the image using the transferred individual points.
- [c26] 26.A method for transferring graphical data in a photolithography system, the method comprising:
converting the graphical data from source data to geometric data;
transferring the geometric data to a graphics device;
transferring the size of the image; and
drawing the image.
- [c27] 27.The method of claim 26 further including transferring transformation instructions, the transformation instructions defining operations to be performed on the geometric data before it is drawn.
- [c28] 28.The method of claim 26 further including transferring camera instructions, the camera instructions defining an area of a subject on which the image is to be drawn.
- [c29] 29. A system for transferring image data for photolithography, the system comprising:

an encoder operable to compress the image data before the image data is transferred;
a first buffer accessible to the encoder and operable to receive the transferred image data; and
a decoder operable to receive the image data from the first buffer and decompress the image data.

[c30] 30.The system of claim 29 further including a format converter operable to convert the image data from a first image format to a second image format, wherein the second image format is compatible with a projection device capable of projecting the image data onto a subject.

[c31] 31.The system of claim 30 further including a second buffer accessible to the decoder and the format converter, the second buffer operable to receive image data being transferred from the decoder to the format converter.

[c32] 32.The system of claim 30 wherein the projection device is a diode array.

[c33] 33.The system of claim 30 wherein the projection device is a pixel panel.

2017-03-16 10:00:00